Europäisches Patentamt | European Patent Office | Office européen des brevets

Bescheinigung | Certificate | Attestation

Die angehefteten Unterlagen stimmen mit der ursprünglich eingereichten Fassung der auf dem nächsten Blatt bezeichneten europäischen Patentanmeldung überein.

The attached documents are exact copies of the European patent application described on the following page, as originally filed.

Les documents fixés à cette attestation sont conformes à la version initialement déposée de la demande de brevet européen spécifiée à la page suivante.

Patentanmeldung Nr. | Patent application No. | Demande de brevet n°

02447220.1

PRIORITY DOCUMENT
SUBMITTED OR TRANSMITTED IN COMPLIANCE WITH RULE 17.1(a) OR (b)

Der Präsident des Europäischen Patentamts;
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets
p.o.

R C van Dijk

Anmeldung Nr:
Application no.: 02447220.1
Demande no:

Anmeldetag:
Date of filing: 13.11.02
Date de dépôt:

Anmelder/Applicant(s)/Demandeur(s):

Thomson Multimedia Broadband Belgium
Prins Boudewijnlaan 47
2650 Edegem
BELGIQUE

Bezeichnung der Erfindung/Title of the invention/Titre de l'invention:
(Falls die Bezeichnung der Erfindung nicht angegeben ist, siehe Beschreibung.
If no title is shown please refer to the description.
Si aucun titre n'est indiqué se referer à la description.)

A router device comprising an installation application

In Anspruch genommene Priorität(en) / Priority(ies) claimed /Priorité(s) revendiquée(s)
Staat/Tag/Aktenzeichen/State/Date/File no./Pays/Date/Numéro de dépôt:

Internationale Patentklassifikation/International Patent Classification/
Classification internationale des brevets:

H04L12/00

Am Anmeldetag benannte Vertragstaaten/Contracting states designated at date of filing/Etats contractants désignées lors du dépôt:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

A router device comprising an installation application

1.1 Fixed wizards running on a PC

Since it became clear that having a good DSL router is not enough, quite some engineering effort has been spent on the user-friendly installation process of a DSL router.
Many products were shipped with an installation wizard leading the technically inexperienced end user from a router with factory defaults settings to a router tuned to the needs of the specific ISP the end user has selected.
All those wizards had (and apparently still have) one common behavior: they use a fixed pattern of questions to guide the end-user through the installation process.
If a specific ISP used a 'not so common' network setup (anything different from PPP with NAT) all he could do was going to his router supplier and ask for a customized wizard.

1.2 A configurable wizard running on a PC

To avoid the pitfall of having to design customized wizards over and over again, a configurable wizard was developed.
Using template (text) files the behavior of the this type of wizard can be customized in a very easy way: adding a single file on the CD before shipping it to the end user completely defines the setup wizard as it will present itself to the end user trying to install his router. Even multiple templates are allowed so that multiple DSL configuration types can be used on just one CD.
Now it is the ISP who completely owns the customization process, not the router supplier.

1.3 PC driven installation: pro's and con's

The wizards discussed so far were all applications running on a PC platform.
Soon the following pro's and contra's were identified:
PRO:

- Great improvement over manual installation.

- ISP owns the customization (in cooperation with technical assistance from the router supplier).
- Can configure a router even if no (normal) IP connectivity exists (MDAP: multicast discovery and access protocol)
- PC is configured as well to match with the router settings.

CONTRA

- Platform dependent (in many cases windows only)
- (customized) CD required.

2 THE EVOLUTION : EMBEDDED WIZARDS

2.1 What is it?

Contrary to a host driven installation where an application running on the host (PC, MAC, UNIX, LINUX,...) controls the installation process, an embedded wizard runs on the DSL router itself and using an embedded web server it interacts with the end user through an interface that is available on most known platforms: a web browser.
As mentioned before, also this type of installation wizard exists already for quite some time.

2.2 Fixed embedded wizards

For fixed embedded wizards, the same story applies as for the host driven installation, even worse. An ISP who wants an embedded wizard with specific behavior needs a customized software build to be installed on the router. Whereas a customized host wizard is relatively easy to develop and test, changing the wizard behavior of an embedded system is a much more dangerous activity, implying a much longer lead time.

The object of the invention is a router device characterized in that it comprises an embedded and configurable installation application.

Other characteristics and advantages of the invention will appear through the description of a non-restricting embodiment, explained with the help of figures 1 to 5, representing the behavior of an embedded wizard based on the template of appendix A.

The inventive solution: a configurable embedded wizard.

The inventors went a step further and designed a configurable embedded wizard.
Using template (text) files the behavior of the wizard can be customized in a very easy way: a single file upload to the router before shipping it to the end user completely defines the setup wizard as it will present itself to the end user trying to install his router. Even multiple templates are allowed so that multiple DSL configuration types can be used on just one router.
Although uploading the template file to the router should typically be done before shipping the router, it can be done in a very easy way by the end user as well. Templates activating new functionality can be distributed via the ISP's portal, via mail or any other electronic distribution system.
Also the router upgrade and setup wizards can upload new templates to the router.
We believe that this way of avoiding recurrent engineering effort for designing wizards for embedded systems is unique.

2.3 Embedded wizards: pro's and contra's

PRO

- Platform independent
- No (customized) CD required

CONTRA

- File upload needed to customize router (preferable to be done during the order fulfillment phase, adding a disk/CD to the package)
- Correct IP connectivity required to run the embedded wizard.
- No PC configuration.

3 THE INVENTIVE EMBEDDED WIZARD: HOW IT WORKS

This section explains in detail how the router's configurable embedded wizard according to the present embodiment works.

3.1 Template files

A default template will be present on the router to cover often used scenarios without the need for customization (identical as a fixed embedded wizard)

Any ISP requiring a different wizard behavior will design a template file covering his needs and upload it to the router before shipping it to the end user.
Note: uploading a template can be done using ftp (typically in order fulfillment), by the SpeedTouch setup or upgrade wizard, by the end user in the first step of the embedded wizard or using the advanced file upload web page.
The template file defines the wizard behavior:

- How many screens, title, subtitle and help text.
- What questions are asked on every screen including help text.
- The selection possibilities for every screen: text boxes, list boxes, combo boxes, radio buttons.
- Using conditional command execution a huge variety of configuration and configuration options can be stored in just one template file.

3.2 The wizard web pages

Based on the template file selected the router according to the present embodiment, generates the corresponding web pages with all necessary controls on it.

3.3 The resulting configuration file

After completing the configuration wizard (stepping through the wizard screens) the router saves all information gathered in the template file for further (re)use and generates a compact configuration file for its own use (the well known .ini file)

Appendix A: Example of a template file (extract)

[wizard.ini]

```
def var=atm type=grp desc="ATM VPI/VCI value" help="Configure the VPI/VCI
value. This value should be provided by your ISP" alias="ATM parameters"
def var=vpvc type=combo grp=atm desc="Select the correct VPI/VCI value"
alias="VPI/VCI" req=yes default="8*35"
data="0*35,0*36,0*37,0*38,0*39,0*40,8*35,8*36,8*37,8*38,8*39,8*40"
def var=ppp type=grp desc="Configure PPP parameters" alias="Point-to-
point_protocol" help="Configere the PPP settings. These values should be
provided by your ISP"
```

```
def var=ppptype type=list grp=ppp alias="PPP type" desc="Select the PPP
type" data="PPPoA,PPPoE"
def var=dialtype type=list grp=ppp alias="Dial-in mode" desc="Select your
preferred dial-in mode" data="dial,dod,on" dalias="Dial-
in,Dial_on_demand,Always_on" default="on"
```

Claims

1. A router device characterized in that it comprises an embedded and configurable installation application.

Abstract

A router device characterized in that it comprises an embedded and configurable installation application.

Fig. 5

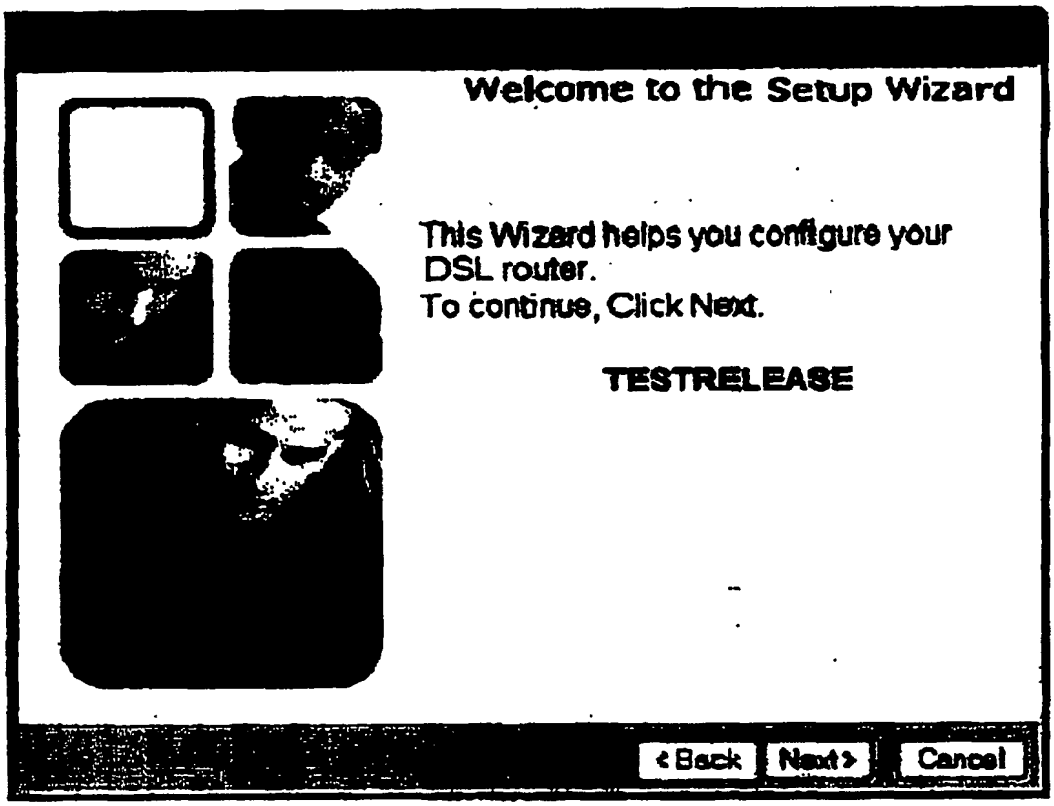
Welcome to the Setup Wizard
This Wizard helps you configure your DSL router.
To continue, Click Next.
TESTRELEASE
< Back
Next >
Cancel

Fig. 1

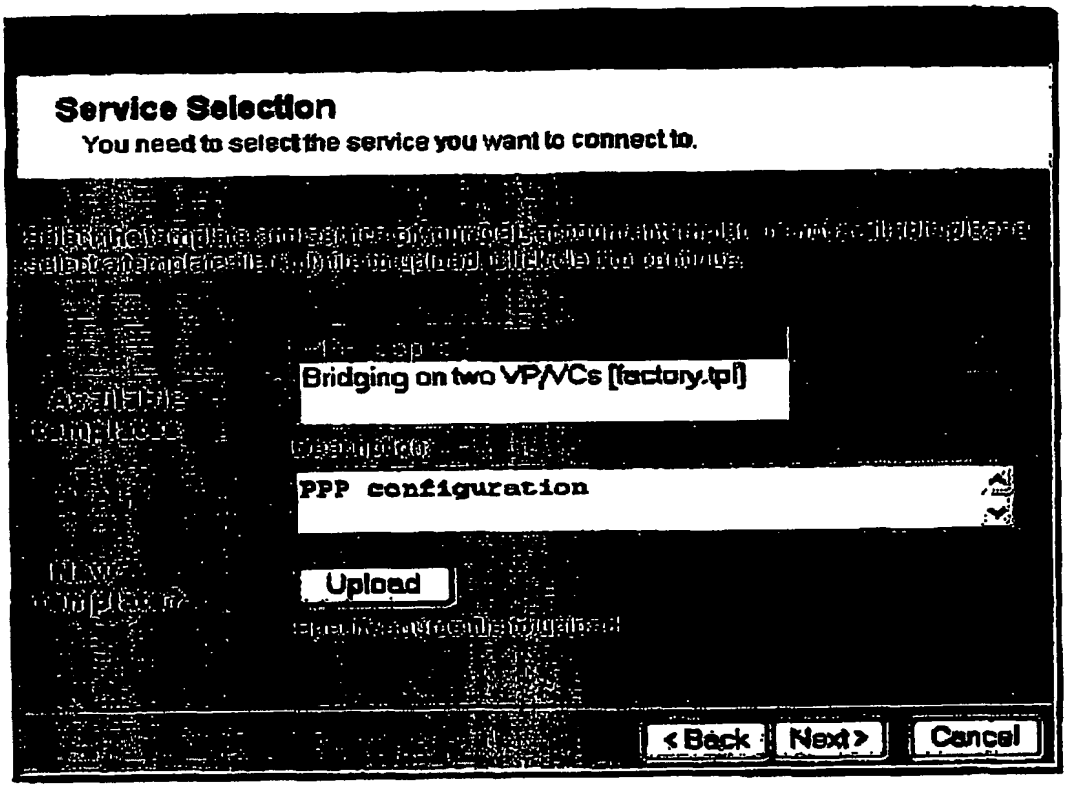
Service Selection
You need to select the service you want to connect to.
Bridging on two VP/VCs [factory.tpl]
PPP configuration
Upload
< Back
Next >
Cancel

Fig. 2

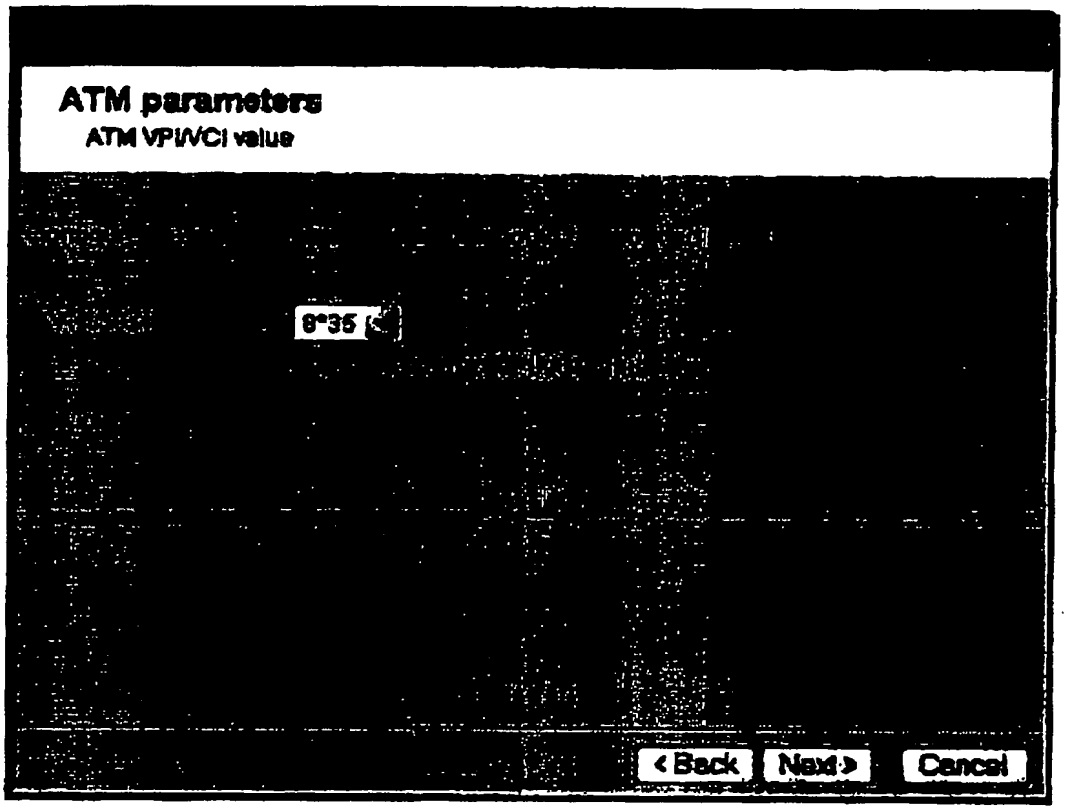

Fig. 3

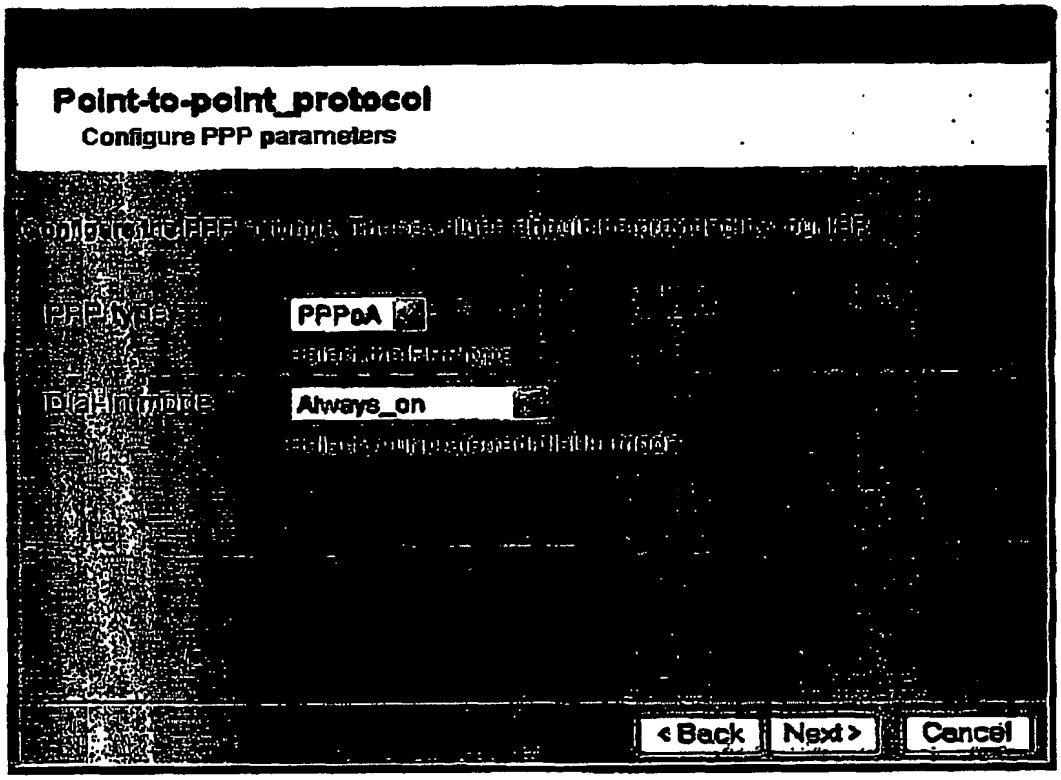
Point-to-point_protocol
Configure PPP parameters
PPP type
PPPoA
Dial mode
Always_on
< Back
Next >
Cancel

Fig. 4

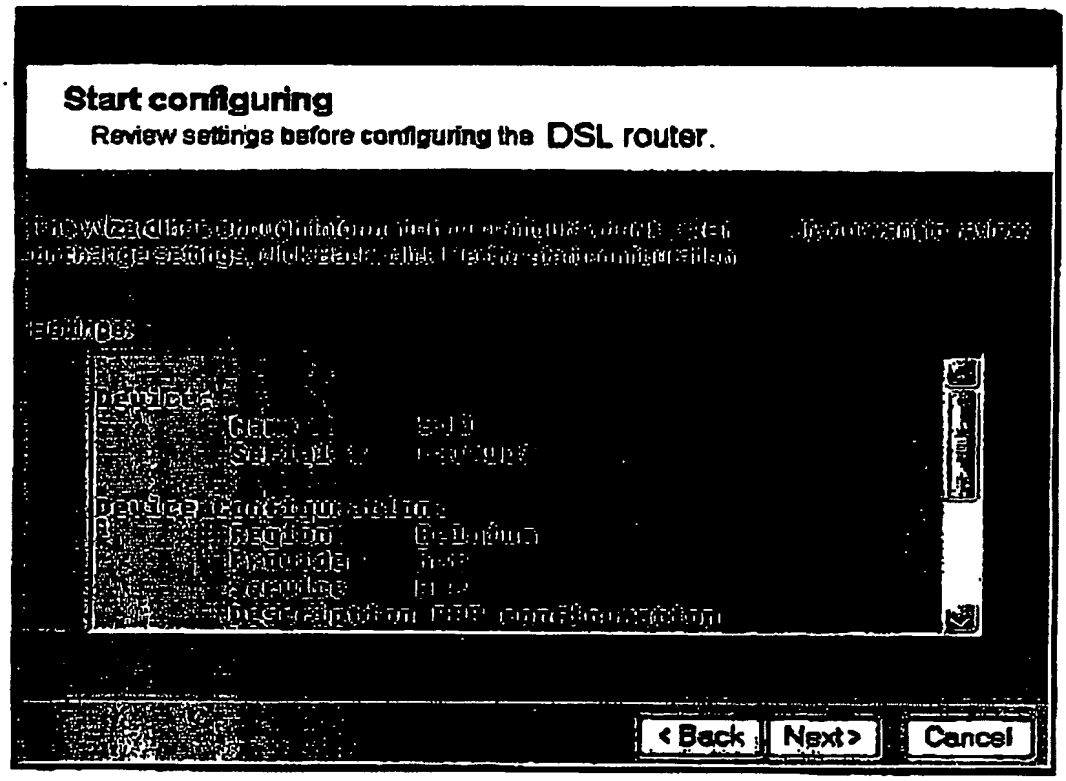
Start configuring
Review settings before configuring the DSL router.
< Back
Next >
Cancel

Fig. 5

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☑ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☑ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.
As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.